What is claimed is:

1. A laser-light alignment method for adjusting alignment of laser light in a combined-laser-light source in which a bundle of laser beams emitted from a plurality of semiconductor lasers is converged through an optical system and enters a core portion of a light-entrance end of an optical fiber so that the laser beams are combined in the optical fiber, and the combined laser beams are outputted from a light-emission end of the optical fiber, said laser-light alignment method comprising:

(a) maintaining said combined-laser-light source in a condition in which steady temperature control is performed;

(b) measuring light intensity of the combined laser beams outputted from the light-emission end of the optical fiber, while moving said light-entrance end of the optical fiber in a direction parallel to an end face at the light-entrance end so that a center of an area of the end face through which the laser beams emitted from the plurality of semiconductor lasers enter the optical fiber moves along a diameter passing through a center of said core portion;

(c) determining two positions of said light-entrance end at which the light intensity

measured in step (b) is equal to a certain value which is smaller than a maximum value of the light intensity measured in step (b); and

(d) aligning a center of said core portion of said optical fiber with a middle position between said two positions determined in step (c).

2. A laser-light alignment method for adjusting alignment of laser light in a combined-laser-light source in which a bundle of laser beams emitted from a plurality of semiconductor lasers is converged through a convergence lens and enters a core portion of a light-entrance end of an optical fiber so that the laser beams are combined in the optical fiber, and the combined laser beams are outputted from a light-emission end of the optical fiber, said laser-light alignment method comprising:

(a) maintaining said combined-laser-light source in a condition in which steady temperature control is performed;

(b) measuring light intensity of the combined laser beams outputted from the light-emission end of the optical fiber, while moving said convergence lens in a direction perpendicular to an optical axis of the convergence lens so that a center of an area of the end face through which the laser beams emitted from the plurality of

semiconductor lasers enter the optical fiber moves along a diameter passing through a center of said core portion;

(c) determining two positions of the optical axis of said convergence lens at which the light intensity measured in step (b) is equal to a certain value which is smaller than a maximum value of the light intensity measured in step (b); and

(d) placing said the optical axis of said convergence lens at a middle position between said two positions determined in step (c).

3. A combined-laser-light source comprising:

a plurality of semiconductor lasers;

an optical fiber which has a core; and

an optical system which converges a bundle of laser beams emitted from said plurality of semiconductor lasers, and makes the converged bundle of the laser beams enter the core of said optical fiber so that the laser beams are combined in the optical fiber when the laser beams pass through the optical fiber;

wherein said optical system and said optical fiber are aligned with each other so that the converged bundle of the laser beams is incident on an area of an end face of the core when steady temperature control is performed on said combined-

laser-light source, where the area is concentric with the end face of the core, and has a diameter equal to or smaller than half of a diameter of the core.

4. A combined-laser-light source according to claim 3, wherein said plurality of semiconductor lasers are GaN-based compound semiconductor lasers.

5. A combined-laser-light source according to claim 3, wherein said optical fiber is a multimode optical fiber.

6. A combined-laser-light source according to claim 4, wherein said optical fiber is a multimode optical fiber.

7. An exposure system comprising:

a combined-laser-light source which includes,

a plurality of semiconductor lasers,

an optical fiber which has a core, and

an optical system which converges a bundle of laser beams emitted from said plurality of semiconductor lasers, and makes the converged bundle of the laser beams enter the core of said optical fiber so that the laser beams are combined in the optical fiber when the laser beams pass through the optical fiber, where said optical system and said

optical fiber are aligned with each other so that the converged bundle of the laser beams is incident on an area of an end face of the core when steady temperature control is performed on said combined-laser-light source, and the area is concentric with the end face of the core, and has a diameter equal to or smaller than half of a diameter of the core;

a spatial light-modulation device in which a plurality of light-modulation elements are arrayed, where light-modulation conditions in said plurality of light-modulation elements are respectively changed according to control signals so that said plurality of light-modulation elements individually and optically modulate and output respective portions of said bundle of laser beams combined in the optical fiber when the respective portions are incident on said plurality of light-modulation elements; and

an image-forming optical system which forms an image on an exposure surface with the respective portions of the bundle of laser beams combined in the optical fiber and optically modulated by and outputted from said plurality of light-modulation elements.

8. An exposure system according to claim 7, wherein said image-forming optical system comprises

a microlens array comprised of a plurality of microlenses arrayed in correspondence with said plurality of light-modulation elements, respectively, so that the plurality of microlenses individually condense the respective portions of the bundle of laser beams combined in the optical fiber and optically modulated by and outputted from said plurality of light-modulation elements.